

## WEATHER OF THE MONTH.

## WEATHER OF NORTH AMERICA AND ADJACENT OCEANS.

## GENERAL CONDITIONS.

By A. J. HENRY, Meteorologist.

Normal pressure in the Northern Hemisphere during February as in the preceding month is high over the middle latitudes of the continents and the Atlantic Ocean; 30.60 inches over parts of Siberia, and low over the northern parts of both the Atlantic and Pacific Oceans; about 29.50 inches in the neighborhood of Iceland and over the Aleutian Islands, respectively.

Between the two oceanic areas of low pressure there is a ridge of higher pressure that apparently connects the continental Highs of northeastern Asia and the North American continent by way of Alaska and Bering Sea. The seasonal development of these two great semi-permanent Lows and of the ridge of high pressure between them is responsible for the character of the weather experienced throughout a large portion of the Northern Hemisphere, especially that part north of latitude 40°.

The change in normal pressure from January to February consists in the main of a considerable rise in pressure over the northern part of the Pacific and also, but in a less degree, over the Arctic Ocean and adjacent parts of continental areas bordering thereon. While, therefore, the Aleutian Low begins to fill up during February, the Iceland Low, on the other hand, is intensified slightly and its control of the weather over the North Atlantic extends farther south than in the preceding month. The control of the weather in the Northern Hemisphere is largely bound up with variations, both in the intensity and geographic extent of these centers of high pressure and low pressure, respectively.

In February, 1919, the most conspicuous variation in pressure distribution was a pronounced deficit over Alaska and the Oceanic areas adjacent thereto. Also over the middle and northern portions of the North Atlantic. In general, pressure appears to have been below normal in all parts of the Northern Hemisphere that have thus far been reported upon, save in the Pacific about the Hawaiian Islands.

## NORTH PACIFIC OCEAN.

By F. G. TINGLEY.

Ships' reports thus far received indicate that more bad weather prevailed on the North Pacific Ocean in February than in January, which was a quiet month. Twenty-four ships report gales on one or more days. With a single exception these were on trans-Pacific routes. The gales reported were for the most part encountered north of the 40th parallel. Vessels on the southern route and coastwise shipping experienced favorable weather.

Two fairly well-defined storms appear to have crossed the northern portion of the Pacific during the month, one

from about the 3d to 9th, the other from the 10th to 19th. A third storm seemed to be forming in the region near latitude 35° N., longitude 145° E., about the 24th, but reports do not yet indicate the extent of development or the course taken. The storm of the second decade appears to have been the most severe. During the period from the 10th to 19th a considerable number of ships came within its field of influence, mostly in the region lying north of the 40th parallel and between the 145th and 175th meridians, east longitude. Shifting gales, as high as force 11, were experienced, with barometer readings as low as 28.60 inches. There is evidence that this storm did not pursue a steady eastward course, but had a retrograde movement at one time, since, when encountered by the British S. S. *Tamaha*, it appeared to have a westward direction. Following is the report of the observer on the *Tamaha*:

While bound from Osaka to San Francisco, true course N. 69° E., speed 10 knots, and while in latitude 42° 0' N., longitude 165° 50' E., we passed through the center of a cyclonic depression, traveling westward. At noon on the 15th the weather was fine and settled. Barometer steady at 30, a gentle breeze blowing from the east, blue sky with detached cumulus and cirrus clouds. During the afternoon watch heavy batches of nimbus and cirrus clouds appeared from the eastward covering the whole sky. The glass commenced to fall rapidly, the wind increased in force, and a heavy swell came away from the east. At 4 p. m. the barometer read 29.58, the wind east, 6, sky heavily overcast and snow falling heavily.

As we approached the center of the storm the wind increased in force and the sea became more and more confused, the glass falling rapidly. Several very severe snow squalls were experienced during the night, the wind blowing in sudden gusts at force 8. At midnight the barometer had reached 28.80, wind east, blowing a whole gale, and a very confused sea. At 2 a. m. the wind suddenly veered round to west, falling to force 4, the barometer at 28.63. It continued to blow lightly from the west until 4 a. m., when it commenced to back round to east again, increasing in force.

At 6 a. m. the barometer reached 28.60, the lowest reading during the disturbance; remaining steady for a brief space of time, it commenced rising as rapidly as it fell at the commencement. The wind continued backing to the north, blowing a whole gale until noon, when it began to decrease to a normal force. The sea assumed a more orderly appearance, shifting around with the wind, settling down into a long heavy northerly swell.

The glass continued to rise rapidly. All day the 17th we had moderate weather, but for the next three days we experienced a strong westerly gale with a huge sea from the same direction.

It was undoubtedly this storm which caused the very low pressure at Dutch Harbor on the 17th, when the barometer read 28.40 inches. The general depression, of which it was a part, was probably related to the low pressure which prevailed on the Pacific coast of the United States during the last days of the month.

A rare phenomenon is reported by E. W. Elliott, observer on the American S. S. *Monmouth*. Mr. Elliott states that on February 13, at 3.30 a. m., ship's time, while in latitude 21° 19' N., longitude 151° W., with the moon showing through clouds, two rainbows, one over the other, lasting for about 10 minutes, were observed in the southeast part of the sky.